

Amendments to the Claims: This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

1-5 (Cancelled)

6. (Withdrawn) A stent delivery system comprising:

a catheter having an inner shaft with a distal end and a proximal end;

an outer shaft disposed around the inner shaft, wherein the outer shaft is moveable relatively to the inner shaft;
a handle attached to the proximal end of the catheter;
a stent concentrically arranged around a distal region of the inner shaft, wherein a guidewire is disposed within a lumen of the inner shaft; and
a sheath extending around the inner shaft and the stent, the sheath having a composite structure and being coupled to an actuator on the handle with a wire such that the sheath can be moved longitudinally relative to the inner shaft in response to the movement of the actuator;

wherein said stent comprises a tubular body having a plurality of strands helically wrapped about each other to form spaced interlocking joints.

7. (Withdrawn) The stent delivery system of claim 6 wherein the interlocking joints extend longitudinally relative to the tubular body.

8. (Withdrawn) The stent delivery system of claim 7 wherein the tubular body includes a plurality of cells defined by regions of intersection of the strands, the regions of intersection including helically wrapped interlocking joints and pairs of crossed joints.

9. (Withdrawn) The stent delivery system of Claim 6 further comprising a mounting ring having longitudinal ridges that hold the stent to a stent platform during mounting of the stent to the inner shaft.

10-20 (Cancelled)

21. (Currently Amended) A method of delivering a stent within a body comprising:

providing a catheter having an inner shaft, with a ring disposed on the inner shaft, the ring having discontinuous protrusions at different circumferential positions, a stent mounted around the inner shaft, ~~the stent having open areas through which pass the discontinuous protrusions of the ring,~~ and a sheath having a longitudinal length positioned around the stent; the protrusions having an outside diameter at least as great as the mounted stent;

positioning a distal end of the catheter at a delivery site within the body by advancing the catheter through a body passageway;

translating the sheath relative to the stent;

releasing the stent from the catheter at the delivery site; and

removing the catheter from the body.

22. (Original) The method of claim 21 further comprising providing a handle with an actuator that is coupled to the sheath such that the actuator can translate the sheath along a longitudinal axis of the catheter to expose the stent.

23. (Original) The method of claim 21 further comprising providing a stent formed of a self-expanding material.

24. (Cancelled)

25. (Original) The method of claim 21 further comprising providing a stent having a plurality of helically wrapped strands forming interlocking joints and a plurality of strands forming cross joints.

26. (Original) The method of claim 21 further comprising providing a stent having a tubular body with a plurality of cells, the cells being formed by one or more strands extending between regions of intersection, at least some of the regions of intersection having helically wrapped strands forming interlocking points such that the joints extend longitudinally relative to the tubular body.

27. (Original) The method of claim 25 wherein the interlocking points each extend circumferentially around the stent.

28. (Withdrawn) A stent delivery system comprising:

a catheter having an inner shaft with a distal end and a proximal end;

a handle having an actuator, the handle being connected to the catheter;

a self-expanding stent concentrically arranged around a distal region of the catheter at the distal end, the stent having a plurality of helically wrapped strands that form interlocking joints; and

a sheath extending around the inner shaft and the stent, the sheath having a composite structure and being coupled to the actuator such that the sheath can be moved longitudinally relative to the inner shaft to expose the stent.

29. (Withdrawn) The stent delivery system of claim 28 wherein the sheath has a proximal end and a distal end and a material property of the sheath varies from the proximal end to the distal end of the sheath.

30. (Withdrawn) The stent delivery system of claim 28 wherein the sheath comprise a braid or coil structure.

31. (Withdrawn) The stent delivery system for claim 28 further comprising a coupling element connected to the sheath and extending within the catheter from the sheath to the proximal end.

32. (Withdrawn) The stent delivery system of claim 28 wherein the inner shaft has a plurality of concentric layers including a tubular support layer and a covering layer over the support layer.

33. (Withdrawn) The stent delivery system of claim 28 wherein the stent comprises a tubular body having a plurality of strands that form cross joints.

34. (Withdrawn) The stent delivery system of claim 28 wherein the interlocking joints extend longitudinally relative to the tubular body.

35. (Withdrawn) The stent delivery system of claim 28 wherein the sheath includes an inner layer of a fluorinated polymer, a second layer encircling the inner layer and comprising a polyurethane, a third layer encircling the second layer, and a fourth layer having a varying property material including a relative high durometer material and a relative low durometer material.

36. (Withdrawn) The stent delivery system of claim 35 wherein the third layer is a polymer.

37. (Withdrawn) The stent delivery system of claim 35 wherein the third layer is a metal braid.

38. (Withdrawn) The stent delivery system of claim 28 wherein the inner shaft comprises a coiled or a braided structure.

39. (Withdrawn) The stent delivery system of claim 29 wherein the material property comprises stiffness of the sheath, the sheath having a first stiffness along a proximal section and a lower stiffness along a distal section.

40. (Withdrawn) The stent delivery system of claim 38 further comprising a plurality of ridges on the inner shaft such that strands of the stent extend around the ridges.

41. (New) A method of delivering a stent within a body comprising:

providing a catheter having an inner shaft, with a ring disposed on the inner shaft, the ring having discontinuous protrusions at different circumferential positions, a stent mounted around the inner shaft, and a sheath having a longitudinal length positioned around the stent; the protrusions having an outside diameter at least as great as the mounted stent and extending through a portion of the proximal end of the stent;

positioning a distal end of the catheter at a delivery site within the body by advancing the catheter through a body passageway;

translating the sheath relative to the stent;
releasing the stent from the catheter at the delivery site; and
removing the catheter from the body.